RM/JJ

REPORT OF THE MAFF AGRICULTURAL LAND CLASSIFICATION SURVEY (1988) - GONSAL QUARRY (S90/138)

Summary :

The land has been classified following the Agricultural Land Classification of England and Wales - revised guidelines and criteria of grading the quality of agricultural land (MAFF, 1988). Of the land surveyed 45% is classified as sub grade 3a and 40% as sub grade 3b. A further 15% is classified as grade 4.

1. INTRODUCTION :

The survey work was carried out on 5 March 1990. A 100m grid auger boring survey was completed and soil pits were dug as required.

2. CLIMATIC LIMITATIONS :

The main priorities used in the assessment of climatic limitations are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO) as a measure of the relative warmth of the locality. The figures of AAR and ATO indicate that there are no climatic limitations on this site.

3. SITE LIMITATIONS :

The assessment of site factors is primarily concerned at the way in which topography influences the use of agricultural machinery and hence the cropping potential of the land. In places gradient is a limiting factor affecting the use of the land. Where gradient has been taken into account this will be referred to in section 7.

4. SOIL LIMITATIONS :

The main soil properties which effect the cropping potential and management requirements of land are texture, structure, depth, stoniness and chemical fertility. These may act as limitations separately, in combination or through interactions with climate or site factors. The physical limitations which result from interactions with climate or site are soil wetness, droughtiness and erosion.

To achieve full yield potential a crop requires an adequate supply of soil moisture throughout the growing season. In the Agricultural Land Classification (ALC) system the method used to assess droughtiness takes into account the crop adjusted available water capacity of the soil and the moisture deficit to give an estimate of the average soil moisture balance. Reference will be made in section 7 where droughtiness affects the grading of the land.

5. BACKGROUND INFORMATION :

The solid geology is mapped as Keele Beds of the Upper Coal measures overlain by glacial drifts deposits of clay, sand and gravel. (Sheet 152, Shrewsbury, Geological Survey).

6. AGRICULTURAL LAND USE :

At the time of the survey, March 1990, the site was under grass.

7. AGRICULTURAL LAND QUALITY (APPENDIX 1) :

Sub grade 3a : Typically the soil has a sandy loam texture extending to depths of between 50 and 100 cms and overlying loamy sand and sand. The topsoil content varies between 10 and 15%. Although there is the occasional profile of Grade 2 the areas too small and scattered to identify separately. Droughtiness is the main limitation to the agricultural use of this land and the resultant moisture balance giving a classification of sub grade 3a.

Sub grade 3b : The soil has a sandy loam texture extending to depths of between 30 and 40 cms, with stone preventing auger penetration to any greater depth. Droughtiness is the main limitations to the agricultural use of this land with the resultant moisture balance indicating classification of sub grade 3b.

Grade 4 : The soil has a sandy loam texture. The main limitation to the agricultural use of this land is slope, where gradient exceeds 11° and limits the agricultural land classification to grade 4.

AGRICULTURAL LAND QUALITY - GONSAL QUARRY

Grade/Sub-Grade	Ha	as % of total
3a	3.2	45
3b	2.9	40
4	1.1	15
TOTAL	7.2	100

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a - good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b - moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airport/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

SOIL NOTES

1. 0-50 cm of brown sandy loam, 50-65 cm of brown loamy sand, 65-100 cm of sand, 5YR5/8, surface stone content about 5%. Very slight slope. Grass. 3 A.

2. 0-77 cm of brown sandy loam, slightly stoney below 50 cm, stone at 70 cm. Surface stone content about 5%. Very slight slope, grass. 3a.

3. 0-40 cm of brown sandy loam. Stoney at 40 cm and difficult to auger below this depth. Very slight slope. Grass. 3a/b.

4. 0-50 cm of brown sandy loam, 50-70 cm of sandy loam, 7.5YR3/4, 70-90 cm of brown loamy sand, 7.5YR4/4, 95-100 cm of sand. Surface stone content about 5%. Level, grass. 3a.

5. 0-40 cm of brown sandy loam. Stone at 40 cm. Level, grass. 3a/b.

6. 0-40 cm of brown sandy loam. Stone at 40 cm. Level, grass. 3a/b.

7. 0-35 cm of brown sandy loam, 35-40 cm of brown slightly pinkish brown sandy loam, stone at 40 cm difficult to auger. Surface stone content about 10%. Level, grass. 3a/b.

8. 0-40 cm of brown loamy sand/sandy loam, 10YR3/2, much stone present and difficult to auger below 40 cm. Many small surface stones less than 1 cm in length. Slope. Grass. 4.

9. 0-35 cm of brown gritty coarse sandy loam/loamy sand, 35-60 cm of pink brown sand. Top of ridge. Grass. 3b.

10. 0-50 cm of brown sandy loam, stoney and difficult to auger below this depth. Bottom of slope, cereal. 3a/b.

11. 0-38 cm of brown coarse sandy loam, 38-60 cm of pale yellow brown sandy loam/fine sand. Bank. 4 on stone content.

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SOIL RESOURCES REPORT FOR GONSAL QUARRY

Following the Agricultural Land Classification survey soils have been grouped into units, reflecting similarities in handling, storage and stripping requirements. Two soil units are identified, the largest consisting of typically slightly to moderately stony sandy loams overlying loamy sand and sand and a second smaller unit consisting of sand over coarse sand and gravel. Soil pits were dug as necessary to observe physical characteristics such as structure.

Unit I

The topsoil has a sandy loam texture overlying sandy loam to depths of between 50 and 70 cm, then on to loamy sand and sand. In places auger penetration was prevented by stone at 40cm. A soil pit description is given at Appendix I.

Unit II

This unit lies along a slight ridge at the western boundary at the site. Here the soil has a sand texture, becoming coarser and increasing in gravel content with depth. A soil pit description is given in Appendix II.

RESOURCE PLANNING GROUP
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